Introduction

Low-back pain is one of the most common complaints that lead patients to seek medical attention. It is estimated that there are nearly 15 million physician office visits each year for low-back pain ***(Hart LG et al, 1995).***
Low back pain is now considered more an illness syndrome, rather than a distinct disease. There are many causes of back pain from simple sprain, to complex anatomical derangements to psychosocial issues. Lumbar disc degeneration is one of the more common causes of pathological low back pain ***(Cheung and AL Ghazi, 2008).***

The lumbar vertebrae are the lowest five of the presacral column. In a normal individual, there are five lumbar vertebrae and five associated intervertebral discs ***(Weinstein, 1982).***
The intervertebral discs, which are avascular structures, are located in between adjacent vertebral bodies and allow flexion, extension, and lateral bending motions. They mainly consist of a centrally located nucleus pulposus , the annulus fibrosus encircling the nucleus pulposus, and cartilaginous end plates adjacent to the surfaces of the vertebral bodies ***(Ebraheim et al, 2004).***

Lumbar disc disease progresses as a series of pathophysiologic events, beginning with asymptomatic fissuring and fragmentation within the disc. The decrease in water content and disc height leads to degeneration of the annulus fibrosus resulting in radial tears through which the posteriorly migrated nucleus pulposus herniates, followed by herniation of the disc into the spinal canal or the neural foramen ***(Chueng and AL Ghazi, 2008).***
A number of distinctions between disc bulge, sequestrated disc, free fragment have been made, often based on pathologic or operative findings. Clinically these distinctions are usually of little significance, with the possible exception of a contained herniation which may make a patient candidate for an intradiscal procedure ***(Greenberg, 2006).***

Lumbar disc herniation with the presence of lumbosacral radiculopathies is one of the most frequent peripheral nervous diseases, leading to the restriction of work capacity of persons younger than 45 years of age ***(Neumann and Gerasimova, 2008).***
Although disc herniation may cause a variety of clinical problems but, in addition, disc protrusion may often be found on magnetic resonance imaging (MRI) in asymptomatic patients ***(Findlay, 2002).***
The cardinal symptoms of a symptomatic disc herniation include radicular leg pain , sensory loss and/or motor weakness. These symptoms Introduction must correspond to the respective dermatome and myotome of the compromised nerve root to allow for a conclusive diagnosis. Additional but less frequent findings may be parathesia in the affected dermatome, radicular pain provoked by pressing, sneezing or pressing, pain relief in supine position with hips and knees

flexed , previous episodes of acute back pain. Patients infrequently present with a massive disc herniation which compresses the cauda equina, causing a cauda equina syndrome characterized by incapacitating back and leg pain, numbness and weakness of the lower extremities, inability to urinate (early), paradoxic incontinence (later), bowel incontinence (late) ***(Leonardi and Boss, 2008).***

Radiological evalution of a patient usually starts with screening tests that include AP and lateral radiographs of the spine. In recent times, magnetic resonance imaging (MRI) and computed tomography scanning (CT scan) have largely replaced myelography. MRI is useful to identify soft tissue changes, such as the location of disc herniations, and whether nerve roots are being compressed. A CT scan is often used to evaluate the bony anatomy of the spine ***(Cheung and AL Ghazi, 2008).***

However, magnetic resonance imaging (MRI) has become the imaging modality of choice for the assessment of degenerative disc disorders, compared to computed tomography ***(Leonardi and Boss, 2008).***

As for treatment options for lumber disc herniation conservative non-operative treatment is routinely recommend for at least 68 weeks after initial onset of symptoms. Therapy generally consists of the use of nonsteroidal anti-inflammatory drugs, muscle relaxants, physical therapy, and occasionally epidural steroid injections for acute exacerbations. Only patients that do not respond to a trial of non-operative therapy are considered for surgical intervention. However, if a neurological deficit is present, as may be observed in a patient with a foot drop, early intervention may be entertained. Its to be noted that if a cauda equina syndrome exists, urgent surgical intervention is recommended ***(Tredway and Fessler, 2005).***

The complete laminectomy and transdural approach to herniated lumbar discs, first propounded by Mixter and Barr in 1934, was long ago replaced by strategies to reduce blood loss, incision length, and intraoperative morbidity ***(Dunn and Eichler, 2005).***

Later, through improvements in surgical technique, the discectomy procedure evolved into a hemilaminotomy and microdiscectomy after Caspar and Yasargil introduced the operating microscope into the spine surgeons armamentarium ***(Tredway and Fessler, 2005).***

Evolving technological sophistication has resulted in ongoing modifications of traditional surgical approaches to correct disorders of the spinal axis. Advances in instrumentation and pre- and intraoperative imaging have fueled a move toward minimally invasive, minimal access spine surgery. Recent strategies to refine minimally invasive approaches have focused on endoscopically assisted discectomy. Initial reports involved the use of endoscopy to facilitate percutaneous nucleotomy . The latest innovation of the endoscopic discectomy is a hybrid between percautaneous endoscopic lumbar discectomy and the open microsurgical discetomy called microendoscopic discectomy(MED) ***(Dunn and Eichler, 2005).***

In 1997 Foley and smith introduced the microendoscopic discectomy procedure; utilizing an endoscope through a tubular retractor system and long tapered instrumentation designed specifically for the use in a small working place, allowed the spinal surgeon s to reliably decompress a symptomatic lumber nerve root via an endoscopic minimally invasive approach ***(Perez-Cruet et al, 2002).***

The original MED instrumentation set was modified to improve compatibility with the operative microscope with the METRx-MD system (Microscope Endoscopic Tubular Retractor System - Microdiscectomy). MED system and METRx-MD system can be used for treatment of free fragment disc herniations as well as canal stenosis, conditions that were previously un-

addressed by other percutaneous procedures **(Thongtrangan et al, 2004).**

The purported advantages of this technique include less iatrogenic soft-tissue injury, improved visualization, less blood loss, less postoperative pain, and earlier hospital discharge ***(Perez-Cruet et al, 2002).***

Disadvantages reported utilizing MED technique include infection , unintended durotomy with leakage of cerebrospinal fluid (CSF) , injury to the nerve root, and recurrenrt disc herniation ***(Dunn and Eichler, 2005).***

Aim Of The Essay AIM OF THE ESSAY

The aim of this essay is to review the microendoscopic technique used in treatment of lumbar disc prolapse , as regarding the procedure , its indications, contraindications, complications and guides for its use to gain advantage over other techniques.